Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:	)	
	)	
Administration of the North	)	CC Docket No. 92-237
American Numbering Plan	)	Phase I

REPLY COMMENTS
OF THE
UNITED STATES TELEPHONE ASSOCIATION

The United States Telephone Association (USTA) respectfully submits its reply to comments filed December 26, 1992 on Phase I of the above-referenced proceeding.

I. ADMINISTRATION OF THE NANP.

In its comments on Phase I issues, USTA provided the Commission with the following mission statement to govern the administration of the North American Numbering Plan (NANP): to ensure the continued availability of numbering resources and the logical evolution of numbering capabilities to support the telecommunications industry. USTA also identified five attributes essential for successful administration of the NANP and discussed several alternatives for NANP administration. USTA urged the Commission to ensure that NANP administration focuses on the continued viability of the NANP and its capability to accommodate the needs of carriers and users.

Several parties addressed changes to the NANP as well as to its administration in their comments. However, it appears that few commenting parties discussed the impact that changing the NANP and its administration will have on customers. Such changes could affect millions of customers since changes in the NANP or how it is administered could have a direct impact on the public switched telephone network. Consequently, exchange carriers and their customers have a significant stake in the outcome of this proceeding. Any changes instituted by the Commission must not impose hardships on customers, must not force customers to incur additional costs and must not endanger the availability of numbering resources. Exchange carriers remain ready to work with other service providers to make sure that the appropriate numbering resources are made available for new services and remain committed to the efficient use of NANP resources to meet the long term needs of the telecommunications industry and its customers.

Many numbering issues are currently under consideration in established industry groups. While such groups may be the appropriate arbiters of these issues, the Commission should be aware that these groups, as well as the current NANP administrator, are making decisions which are altering traditional applications of the public numbering resource.[1]

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[1]Within the context of international inbound traffic an interchangeable numbering plan area (INPA) code has been assigned to identify carriers handling inbound international traffic. Such allocations will accelerate the exhaust of INPA codes.

Further, consideration of possible changes to the NANP or its administration should also take into account their impact on the other countries in World Zone 1. As noted in its comments, USTA strongly supports the continuation of the current internationally integrated numbering plan and the integrated, centralized administration of that plan. Any change in the integrated plan could force carriers to make costly changes to every switch in World Zone 1, as it would require the establishment of international dialing between the countries within the integrated plan. Changes which hasten the exhaust of numbering resources will have a direct impact, not only on the public switched telephone network as noted above, but also on all customers in World Zone 1.

In any event, USTA recommended that no change in administration of the NANP should occur until after 1995 in order to avoid interfering with the implementation of carrier identification code expansion and interchangeable NPA codes.

II. OTHER ISSUES.

A number of the other issues raised by the Commission were included in the comments. USTA will address two of these issues, personal communications services (PCS) numbering and local number portability, in these reply comments.

A. PCS Numbering.

USTA stated in its comments that the numbering plan for new technologies and services should be part of the NANP. USTA also stated that the objective of non-geographic numbering resources dedicated to PCS should be to support service provider portability. As with 800 database service, PCS number portability will enhance the value of PCS to customers by providing a more efficient allocation of numbering resources, by permitting customers to change service providers without changing numbers and by allowing a greater number of service providers to offer PCS.

In order to facilitate implementation of PCS to best serve the public interest, USTA recommends that the Commission require service provider portability. This will certainly ease the transition to PCS by making it easier for customers to utilize new personal services and will encourage new providers to enter the PCS market.

The Commission must carefully consider the impact of any PCS numbering plan which would result in major switch modifications or a change in the dialing pattern. USTA recommends that the implementation of the home-based and country-based PCS numbering schemes utilize the NANP.[2] For example, USTA has opposed efforts to either mandate or encourage use of the prefix plan, e.g., an extended NANP, for

[2]See, Attachment 1.

universal personal telecommunications numbering.[3] USTA believes that such a plan would cause unnecessary customer confusion. It would also force exchange carriers to make costly hardware and software changes to their networks to accommodate the additional digits. While the costs of these changes ultimately may be borne by customers, it has not been clearly demonstrated that customers ultimately will receive any benefit from such a plan.

B. Local Number Portability.

In its comments, USTA described the extent of the modifications which would be required to implement its interpretation of local number portability.[4] The comments include a variety of interpretations regarding local number portability. Given the possibility that local number portability will require extensive system and operational changes, the concept of local number portability and the geographic area to be covered must be more clearly and uniformly defined before any action is taken to further this concept.

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[3]See, Attachment 2.

[4]See, also comments of U S WEST and SNET.

III. CONCLUSION.

USTA urges the Commission to carefully consider the impact of any changes in either the NANP, the administration of the NANP or any other numbering issue on customers before any such changes are enacted.

Respectfully submitted,

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Committee T1
Contribution

T1P1.3/93-003

Standards Project: T1P1.3 UPT/PCS
Subworking Group: Numbering, Addressing, Routing

Title: Draft Technical Report for UPT Numbering, Addressing and Routing

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Abstract: This contribution represents a draft Technical Report (TR) to provide the North American industry with technical guidance on the numbering, addressing, and routing aspects of implementing UPT/PCS in North America (CCITT-World Zone 1).

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DRAFT TECHNICAL REPORT

UPT/PCS NUMBERING, ADDRESSING AND ROUTING

VERSION #2
FEBRUARY 1993
USTA NUMBERING PLANNING SUBCOMMITTEE

DRAFT TECHNICAL REPORT
FOR
UPT/PCS NUMBERING, ADDRESSING AND ROUTING

1.0 SCOPE AND PURPOSE

Universal Personal Telecommunications/Personal Communication Service (UPT/PCS) architecture and services are currently being implemented both internationally and in North America. The CCITT is in the process of developing international standards covering all aspects of UPT (see reference listing below).

The purpose of this Technical Report (TR) is to provide the North American industry with technical guidance on the numbering, addressing and routing aspects of implementing PCS in North America (CCITT - World Zone 1).

CCITT Rec. E.168 "Application of Rec. E.164 Numbering Plan for UPT" defines the Rec. E.164 "Numbering Plan for the ISDN Era" numbering to be applied according to three different applications of UPT, Home-based, Country-based and Global serving areas. Each application is based on an assumption regarding the UPT/PCS geographic serving area, i.e. Home-based is limited (e.g. to a city) where as Global provides full coverage anywhere in the world. The scope of this T.R. is restricted to the Home-based and Country-based applications of PCS within World Zone 1. Further, the scope is limited to Incoming calls to the UPT/PCS user from terminals on the PSTN (Public Switched Telephone Network).

2.0 REFERENCES

2.1 CCITT Source Documents

Draft	Rec. F.850	Principles of UPT
Draft	Rec. F.851	Service Description for UPT
Draft	Rec. E.164	Numbering Plan for the ISDN Era
Draft	Rec. E.168	Application of E.164 Numbering Plan for UPT
Draft	Rec. E.174	UPT Routing Plan

2.2 T1P1 Source Documents

T1P1.3/92-002	T1P1 System Engineering Working Document for PCS
T1P1.3/92-101	Personal Communication Terminology
T1P1.3/92-104	UPT Service Set One-General Description

2.3 Other Source Documents

To follow

3.0 DEFINITIONS

General PCS definitions can be found in TR T1P1.3/92-101R3. Definitions which specifically pertain to numbering, addressing and routing aspects of UPT/PCS are included in the appropriate text of this TR.

4.0 UPT/PCS CALL TYPES

UPT/PCS involves three distinctly different types of calls. These are described in this section.

4.1 Transaction Calls

In this call type the UPT/PCS user directly interacts with the database of the subscribed UPT service provider in order to update his/her service profile.

The call typically consists of four stages:

- dialing and routing through the PSTN to reach the database or service profile manager;

- interaction (handshake) to validate caller identity;

- service profile update (e.g. updating service/routing of incoming call instructions; etc.)

- verification of update and disconnect.

This call type is not covered in this TR. However, the first stage of the call would typically require the use of a standard North American Numbering Plan (NANP) PSTN number supplied by the service provider to reach the database/service profile manager. The second and third stages (handshake/interaction) are the purview of the service provider and therefore are not subject to standardization.

4.2 Outgoing Calls

This call type provides the UPT/PCS user with the capability of temporarily establishing personal billing and service access from any given network terminal. It involves a three step transactional sequence, which is followed by the placement of one or multiple calls into the network. The first phase is as follows:

- establish a connection through the network (PSTN) with the UPT/PCS user's service provider as agent;

- validation/authorization process;

- establishment of a temporary billing/service arrangement for a "set" of outgoing calls from a terminal or location. A "set" of outgoing calls may consist of a single call, a sequence of calls (e.g. 5) or a fixed or open time period for which outgoing calls may be placed.

The second phase of this call type involves the placement of a call or calls by the UPT/PCS user from the chosen terminal(s). These calls are established using standard network addressing and routing procedures.

The procedures used in the initial phase of the outgoing call set up (transactional sequence) are service provider defined and are not subject to standardization.

4.3 Incoming Calls

This call type involves the establishment of a communication between a caller, typically POTS, and the UPT/PCS user over the public switched telephone network (PSTN). Note that this is the only UPT/PCS call type that this TR is intended to cover.

The basic addressing and call set-up procedures are as follows:

- the caller dials the UPT/PCS user's personal number (the 10 digit, 3 + 3 + 4 formatted E.164 NANP number);

- the network (PSTN) establishes a connection with the UPT/PCS user's service provider's database. The number will indicate which network translation techniques are used to route the call. Calls may be physically routed to the database or held while signalling messages are used to establish the destination instructions;

- the service provider's database supplies the current destination terminal number (DTN) as designated by the UPT/PCS user;

- the network completes the call to the destination terminal number (DTN). Note that the DTN is the physical network address of a network terminal, voice mail facility, answering service, etc. The DTN is also referred to as the routing address.

5.0 UPT/PCS NUMBER STRUCTURE

In order to provide a seamless addressing scheme which is immediately implementable, the World Zone 1 UPT/PCS number structure shall be consistent with CCITT Rec. E.164 (Numbering Plan for the ISDN Era) as is currently implemented in World Zone 1 - specifically the North America Numbering Plan (NANP). The UPT/PCS number structure will therefore consist of 10 digits in the form:

NPA	NXX	XXXX
3 Digits	3 Digits	4 Digits

Further, the UPT/PCS numbering structure in World Zone 1 will adhere to CCITT Rec. E.168 (Application of Rec. E.164 Numbering Plan for UPT) and provide for different implementations of UPT/PCS within World Zone 1. Specifically the home-based and country-based schemes will be provided for initially. The global scheme, by definition, will require complex international agreements and will not be provided in the initial UPT/PCS implementations.

The number structure for the home-based scheme will consist of a geographic NPA code followed by a standard 7 digit subscriber number (SN).

	Subscriber Number (SN)	
NPA	NXX	XXXX
3 Digits	3 Digits (Central Office Code)	4 Digits (Line Number)

The UPT/PCS identifier will be contained within the 7 digit subscriber number.

The number structure for the country-based scheme will consist of a non-geographic Service Access Code (SAC) followed by 7 digits which form the subscriber number.

Subscriber Number (SN)		
SAC	NXX	XXXX
3 Digits	3 Digits	4 Digits

UPT/PCS "identity" will be accomplished through the assignment of unique SAC(s) to the UPT/PCS application in World Zone 1.

Initially, service provider identification will be achieved through the assignment of unique Service Provider Code (SPC) NXX codes as follows:

Subscriber Number (SN)		
SAC	SPC	
NXX	NXX	XXXX
3 Digits	3 Digits	4 Digits

Eventually, network evolution required to support number portability between service providers will be developed. This will eliminate the need for SPC NXX allocation and enable permanent assignment of unique 10 digit numbers to UPT/PCS users.

The number structure for the global-based scheme will consist of a global Country Code (yet to be identified), indicating the number is a UPT/PCS number, followed by the current CCITT assigned country code and a 10-digit NANP number. The NANP number may take the form as described in the home-based scheme or country-based scheme.

		Subscriber Number (SN)		
CC UPT	CC	NPA or SAC	NXX	XXXX
1-3 Digits	1-3 Digits	3 Digits	3 Digits	4 Digits

The global-based scheme will require international agreement for the assignment of a country code, by CCITT, for UPT/PCS services. Given the dependency on the international agreements required to use the global scheme, this scheme is considered as an item for a future report.

6.0 HOME-BASED NUMBERING SCHEME

6.1 Description

For the purpose of this Technical Report, the following describes the Home-based Numbering Scheme. In the Home-based Numbering Scheme UPT/PCS service coverage is limited to a geographic area (e.g. city, state, LATA, NPA). This implies that some PCS functionality for calls to, or from, the user would not be supported outside the pre-defined serving area. Calls to the user from non-PCS users located outside the serving area would be completed according to the UPT/PCS user's instructions.

6.2 Home-based Numbering Structure

In this scheme the UPT/PCS number is a geographic NANP number. For this scheme, the numbering format as depicted in Section 4 may be interpreted as:

NPA NXX XXXX

Where "NPA" is the geographic numbering plan area; "NXX" (central office code) and "XXXX" form the UPT/PCS subscriber's number.

6.3 Home-based Addressing

The following table provides examples of addressing details for all Home-based call types.

Type of call	Prefix	CC	NPA	NXX	LN#	UPT ID	SP ID	Total Digits Dialed
Local Direct Dialed								
(HNPA)				234	5678	NXX-LN#	NXX-LN#	7
HNPA	<1>		708	234	5678	NXX-LN#	NXX-LN#	10<11>
Toll Direct Dialed								
(HNPA)				234	5678	NXX-LN#	NXX-LN#	7
HNPA			708	234	5678	NXX-LN#	NXX-LN#	11
FNPA			206	345	6789	NXX-LN#	NXX-LN#	11
International Direct Dialed								
Australia, Melbourn	011	61	3	670	2562	NXX-LN#	NXX-LN#	13+
Operator Assisted National								
HNPA	0		708	234	5678	NXX-LN#	NXX-LN#	11
FNPA	0		206	345	6789	NXX-LN#	NXX-LN#	11
Operator Assisted International								
Australia, Melbourn	01	61	3	670	2562	NXX-LN#	NXX-LN#	12+

TABLE 1 - Home-based Addressing

6.4 Home-based Routing

Incoming call routing in the Home-based scheme follows the basic two-stage routing technique required for any UPT/PCS call (Ref. Section 4). That is: an initial connection to the UPT/PCS user's service profile to obtain the current destination terminal number (DTN), and, completion of the call to the DTN. It should be noted that due to the local nature of the Home-based scheme the service provider's database and the terminating number (DTN) would typically be located within the Home serving area.

- Calls Originating in a Foreign NPA

  Calls originating from the PSTN in a Foreign NPA would not be recognized as PCS calls and traditional call routing from the originating network to the geographic NPA dialed would occur. Specifically, a 10-digit geographic number is dialed and the network routes the call to the destination NPA. Within the destination NPA the NXX-XXXX code is recognized as being associated with PCS and identifies a PCS Service Provider (PSP). The call is routed to the associated PSP's switching entity and a query is launched to the PSP's database to interrogate the subscriber's service profile to obtain the current destination terminal number specified by the PCS subscriber in their service profile.

- Calls Originating in the Home NPA

  Calls originating from the PSTN in the Home NPA where the NXX code is identified as a PCS Central Office (NXX) code would be routed to the PSP assigned the NXX code. Specifically, the number is dialed according to the local dialing plan (7 or 10 digits) and the network routes the call to the destination PSP associated with the dialed NXX code. The call is routed to the associated PSP's switching entity and a query is launched to the PSP's database to interrogate the subscriber's service profile to obtain the current destination terminal number specified by the PCS subscriber in their service profile.

- Call Delivery

  The call is delivered to the destination terminal number using standard network routing and translation techniques.

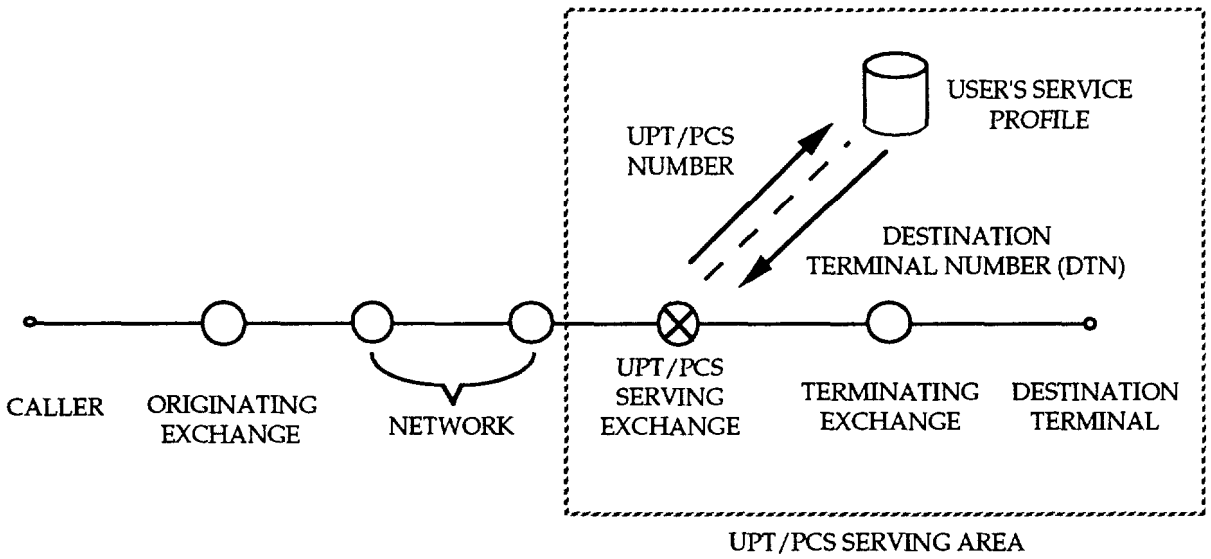

Figure 1 Home-Based Routing - Incoming Call

7.0 COUNTRY-BASED NUMBERING SCHEME

7.1 Description

For the purpose of this Technical Report, the following describes the Country-based Numbering Scheme. In the Country-based Numbering Scheme UPT/PCS service capability is provided throughout a broad geographic coverage area (i.e., USA, Canada, or North America). This implies that full UPT/PCS functionality for all calls to and from the UPT/PCS user would be supported within the defined serving area. Calls to the user from non-UPT/PCS user located both inside and outside (e.g. Japan) the defined serving area would be completed according to the UPT/PCS user's instructions.

7.2 Country-based Numbering Structure

In this scheme the UPT/PCS number is a non-geographic NANP number. The numbering format as depicted in Section 4 may be interpreted as:

SAC NXX XXXX

Where "SAC" (a non-geographic NPA code), "NXX" (Service Provider identification code) and 'XXXX' form the UPT/PCS subscriber's number.

Note 1 - The initial SAC(s) assigned to UPT/PCS may perhaps be in the N00 format. In the post INPA era - UPT/PCS SAC's will not conform to the N00 format but may be allocated from the general pool of new NPA codes.

Note 2 - With advent of UPT/PCS Number Portability, full 10 digit NANP numbers will be assigned to UPT/PCS users and Service Provider specific NXX assignment will disappear. This will allow UPT/PCS users to move freely between Service Providers without number changes.

7.3 Country-based Addressing

The following table provides examples of addressing details for all Country-based call types.

Type of call	Prefix	CC	NPA	NXX	LN#	UPT ID	SP ID	Total Digits Dialed
Local & Toll Direct Dialed								
SAC	1		500	456	7890	500	NXX-LN#	11
International Direct Dialed								
Australia, Melbourn	011		61	15	670	2562	NXX-LN#	13+
Operator Assisted National								
SAC	0		500	456	7890	500	NXX-LN#	11
Operator Assisted International								
Australia, Melbourn	01	61	15	670	2562	15	NXX-LN#	15

Table B - Country-based Numbering and Addressing

7.4 Country-based Routing

Incoming call routing in the Country-based scheme follows the basic two-stage routing technique required for any UPT/PCS call (ref. Section 4). That is: an initial connection to the UPT/PCS user's service profile to obtain the current Destination Terminal Number (DTN), and, completion of the call to that DTN.

In this scheme the UPT/PCS number input into the originating exchange (i.e. SAC NXX XXXX) by the caller contains two fundamental pieces of routing information. The SAC identifies the call as UPT/PCS. The NXX code identifies the UPT/PCS Service Provider. In order to advance the call, the Destination Terminal Number (DTN) which resides in that particular Service Provider's service profile data base must be determined.

At this point the call must be taken to a UPT/PCS "serving exchange". That is an exchange which is equipped with the intelligence (to recognize and route) and connectivity (trunk group and/or signalling link) to either pass the call to the UPT/PCS Service Provider, or retrieve the DTN from the Service Provider's database.

In the first case the Service Provider assumes control of the call and completes it according to the UPT/PCS user's current instructions.